Aviptadil (Lexi-Drugs)

Special Alerts

COVID-19 Important Updates August 2020

FDA has issued an emergency use IND authorization and expanded access protocol for aviptadil for the treatment of patients with COVID-19 and acute respiratory failure. The expanded access protocol allows for aviptadil to be distributed in the United States and administered intravenously by health care providers, as appropriate, to treat COVID-19 patients with acute respiratory failure (see https://www.nrxpharma.com/?s=aviptadil).

Further information may be found at:

FDA: https://www.fda.gov/news-events/fda-newsroom/press-announcements

CDC: https://www.cdc.gov/coronavirus/2019-ncov/hcp/therapeutic-options.html

NIH National Library of Medicine:
Clinicaltrials.gov: https://clinicaltrials.gov/ct2/results?term=aviptadil&Search=Search

Pharmacologic Category

Synthetic Vasoactive Intestinal Peptide

Dosing: Adult

Note: The FDA issued an emergency use investigational new drug (IND) authorization and expanded access protocol for aviptadil for the treatment of coronavirus disease 2019 (COVID-19) patients with acute respiratory failure. The expanded access protocol allows for aviptadil to be distributed in the US and administered intravenously by health care providers, as appropriate, to treat COVID-19 patients with acute respiratory failure (https://www.nrxpharma.com/?s=aviptadil). In addition, other phase II/II multicenter clinical trials are currently ongoing in medical centers across the US (see ClinicalTrials.gov). Dosing will be provided after clinical trials have demonstrated efficacy.

Dosing: Pediatric

Note: The FDA issued an emergency use investigational new drug (IND) authorization and approved an expanded access protocol for aviptadil for the treatment of COVID-19 patients with acute respiratory failure. The expanded access protocol allows for aviptadil to be distributed in the United States and administered intravenously by health care providers, as appropriate, to treat COVID-19 patients ≥12 years of age with acute respiratory failure (see ClinicalTrials.gov) (NeuroRx 2020; NIH 2021b). Current manufacturer protocol should be used for specific dosing information.

Use: Labeled Indications

See Off-label uses.

Use: Off-Label: Adult

Coronavirus disease 2019 (COVID-19) Level of Evidence [C]

In vitro and animal studies demonstrate the activity of aviptadil against coronaviruses (eg, severe acute respiratory syndrome coronavirus [SARS-CoV], SARS-CoV-2, and potential decrease in pulmonary inflammation ([Ref]). A case series describes clinical improvement after receiving intravenous aviptadil in patients with acute respiratory failure due to coronavirus disease 2019 (COVID-19); however, no conclusions about the safety and efficacy of aviptadil can be made until randomized, controlled clinical trials are performed ([Ref]). Aviptadil is currently in phase II/III clinical trials to include patients with acute respiratory failure due to COVID-19 ([Ref]).

Prescribing and Access Restrictions

Aviptadil is not commercially available in the United States; however, it is currently available in other countries to treat other medical conditions. Aviptadil can be obtained through an expanded access (via several ongoing clinical trials) or compassionate use for the treatment of coronavirus disease 2019 (COVID-19) from the manufacturer. Expanded access request forms must be submitted to NeuroRx by the patient's treating physician (https://www.nrxpharma.com/?s=aviptadil); requests are assessed on an individual basis and require the patient to be hospitalized with confirmed infection with significant clinical manifestations (eg, respiratory failure) (NeuroRx 2020; NIH 2021b). In addition, other phase II/III multicenter clinical trials sponsored by NeuroRx are currently ongoing in medical centers across the United States (NIH 2021a; NIH 2021b; NIH 2021c).

Pregnancy Considerations

Aviptadil is under investigation for the treatment of acute respiratory failure due to COVID-19. Pregnant patients may be eligible for treatment under compassionate use (NIH 2021a). Outcome data following maternal use of aviptadil during pregnancy are limited (Youssef 2022).

The risk of severe illness from COVID-19 infection is increased in symptomatic pregnant patients compared to nonpregnant patients. Pregnant and recently pregnant patients with moderate or severe infection are at increased risk of complications such as hypertensive disorders of pregnancy, postpartum hemorrhage, or other infections compared to pregnant patients without COVID-19. Pregnant patients with symptoms may require ICU admission, mechanical ventilation, or ventilatory support (ECMO) compared to symptomatic nonpregnant patients. Other adverse pregnancy outcomes include preterm birth and stillbirth. The risk of coagulopathy, cesarean delivery, and maternal death may be increased; neonates have an increased risk for NICU admission. Maternal age and comorbidities such as diabetes, hypertension, lung disease, and obesity may also increase the risk of severe illness in pregnant and recently pregnant patients (ACOG 2022; NIH 2021d).

Data collection to monitor maternal and infant outcomes following exposure to COVID-19 during pregnancy is ongoing. Health care providers are encouraged to enroll patients exposed to COVID-19 during pregnancy in the Organization of Teratology Information Specialists pregnancy registry (877-311-8972; https://mothertobaby.org/join-study/).

Adverse Reactions

Aviptadil is currently under investigation for use in the treatment of coronavirus disease 2019 (COVID-19) (see ClinicalTrials.gov). At this time, safety data are limited.

Frequency not defined:

Cardiovascular: Bigeminy (Javitt 2020), flushing (Javitt 2020), hypotension (Javitt 2020; Youssef 2020), tachycardia (Javitt 2020)

Gastrointestinal: Diarrhea (Javitt 2020; Youssef 2020)

Metabolism/Transport Effects

None known.

Drug Interactions Open Interactions

There are no known significant interactions.

Mechanism of Action

Aviptadil is a synthetic vasoactive intestinal peptide (VIP) that binds to VIP receptor type 1 ($VPAC_1$) on alveolar type II cells in the lung, the same cells that bind the severe acute respiratory syndrome coronavirus (SARS-CoV-2) via their angiotensin-converting enzyme 2 receptors. VIP protects those cells and the surrounding pulmonary epithelium by blocking cytokines, preventing apoptosis, and upregulating the production of surfactant (Javitt 2020).

Pharmacokinetics

Distribution: V_d: 14 mL/kg.

Half-life elimination: Plasma: ~1 to 2 minutes.

Excretion: Renal (35% within 4 hours, 90% within 24 hours).

References

American College of Obstetricians and Gynecologists (ACOG). COVID-19 FAQs for obstetricians-gynecologists, obstetrics. https://www.acog.org/clinical-information/physician-faqs/covid-19-faqs-for-ob-gyns-obstetrics. Accessed March 15, 2022.

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Brand Names: International

Invicorp (DK, FI, FR, GB, NO, SE)

Last Updated 5/27/22